



Clinical Research

Superiority of Thoracoscopic Sympathectomy over Medical Management for the Palmoplantar Subset of Severe Hyperhidrosis

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Severe hyperhidrosis is a disabling disorder whose management is controversial. Medical treatment consists of topical aluminum chloride, oral anticholinergics, iontophoresis, and botulinum toxin A (Botox) injections. Despite the minimally invasive nature of thoracoscopic sympathectomy, there is a common perception that surgery is only a "last resort." The palmoplantar subtype of hyperhidrosis is particularly problematic for patients professionally and socially. The purpose of our study was to determine the safety, efficacy, and side effects of the various medical treatments vs. bilateral thoracoscopic sympathectomy (BTS) for palmoplantar hyperhidrosis. Consecutive patients ($n = 192$) were selected based on massive palmar sweating, similar level of plantar sweating, bimodal onset in early childhood or puberty, and exacerbation with ordinary hand lotion. A prospective cohort of 47 patients underwent medical treatment with their responses monitored on a prospective basis, and 145 patients underwent retrospective evaluation of their medical treatment based on their histories. Patients whose medical treatments failed or resulted in intolerable side effects were offered outpatient BTS surgery at the T2-T3 level. Of the 47 prospective patients, 46 received topical aluminum chloride, 40 anticholinergics, six iontophoresis, and 45 BTS surgery. Only one patient was successfully treated with aluminum chloride (2.2%) and one successfully treated with anticholinergics (2.5%), and these did not undergo surgery. Iontophoresis was not successful in any prospectively followed patient. BTS was effective in curing palmar hyperhidrosis in 100% of patients. The superiority of BTS vs. topical aluminum chloride, anticholinergics, and iontophoresis to successfully treat palmar hyperhidrosis was highly statistically significant ($p < 0.001$). For the retrospective group of 145 patients, 89 had been treated with topical aluminum chloride, 38 with oral anticholinergics, 31 with iontophoresis, eight with Botox, one with no medical treatment, and 144 with BTS surgery. All medical treatments failed with the exception that one patient was satisfied with anticholinergic treatment (2.6%), and this patient did not undergo BTS. BTS was successful in curing bilateral palmar hyperhidrosis in 99.3% (one unilateral failure due to adhesions). BTS was superior in treating palmar hyperhidrosis compared to aluminum chloride, anticholinergics, iontophoresis, and Botox ($p < 0.001$). The medically treated patients suffered significant side effects ranging from local stinging, cracking, and blistering to xerostomia, xerophthalmia, and blunted mentation. Overall, compensatory hyperhidrosis (CH) was present in 56% of patients undergoing BTS, but only 3.2% of BTS patients had severe CH with significant discomfort; all were men. There were no other significant operative complications. The safety and overwhelming efficacy of BTS compared to medical management of severe palmoplantar hyperhidrosis is demonstrated. Rather than being a "last resort," BTS can be confidently recommended as first-line treatment for the typical, severe form of palmoplantar hyperhidrosis.

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INTRODUCTION

Hyperhidrosis is a condition of excess sweat production from the eccrine glands innervated by sympathetic cholinergic fibers. Essential hyperhidrosis likely results from localized overfunctioning of sympathetic nerve fibers traversing the T2-T3 ganglia¹